Contact allergy to methylisothiazolinone in a deodorant

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Methylisothiazolinone (MI) (CAS 2682-20-4) is a preservative that was approved for use in cosmetics in 2005, with a maximum permitted concentration of 100 ppm (0.01%) (1, 2). Even though it was believed to be a safer alternative to the previous methylchloroisothiazolinone (MCI)/MI mixture, several cases of contact allergy to this compound have recently been reported (3, 4).

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Case Report

A 37-year-old atopic woman presented with a 1-week history of eczematous lesions affecting both axillae. She had been using a new deodorant, Mineral® (Garnier, L'Oréal, Portugal), for the previous 2 weeks. There was a past history of jewellery intolerance, and she did not report any previous skin reactions to perfumes and deodorants. She was treated with topical corticosteroids, and there was complete remission of the lesions in a few days.

Patch testing was performed with Finn Chambers® and according to the International Contact Dermatitis Research Group criteria, with the Portuguese baseline series, a fragrance series, and her own product. The patient reacted to nickel (++), MCI/MI 100 ppm (++),

and to the deodorant (++). A repeated open application test performed on the volar part of the forearm with the deodorant gave a strongly positive result at D2. The patient was patch tested again with MI 200 ppm (Chemotechnique) (++ at D2).

Discussion

Isothiazolinones are effective preservatives used in a wide variety of industrial lacquers, varnishes, inks, household products, and cosmetics (3, 4). The first occupational cases of isolated MI contact allergy were reported in 2004 (5) and 2006 (6), after handling of wallpaper glue and paint, respectively.

García-Gavín et al. published the first seven non-occupational cases after the use of cosmetics that contained only MI (3). Six of them suffered from perineal eczema caused by wipes, and one from eyelid dermatitis resulting from make-up removal. Since then, other cases have been reported (7). In a retrospective investigation performed by Lundov et al., in which 2536 dermatitis patients were patch tested with MI (4), exposure caused by cosmetics, namely in hair care products, liquid soaps, creams, cleansing milk, and a suntan lotion, was found in 32% of the cases. As far as we know, this is the first case regarding a deodorant as a leave-on product.

Primary sensitization to MI seems to be the most reasonable explanation, although primary sensitization to MCI with cross-reactivity to MI cannot be excluded (3).

It should be noted that not only may patients who have been previously sensitized to the mixture MCI/MI react to MI alone, but also that patients previously sensitized to MI may react to products containing MCI/MI (3, 8), and exposure to either of these molecules should be avoided in leave-on products.

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